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A new species of Puccinia

R. E. Stone

The genus *Puccinia* has so many species and so many of them are so hard to determine that it seems almost an imposition to describe a new species. However, in collecting, something is occasionally found that can not be referred correctly to any known species.

The "rusts" on plants of the Cyperaceae most frequently belong to the genus *Puccinia*. However, *Rynchospora* seems to be an exception and the only "rust" I find listed for that genus belongs to the *Uromyces* type of the Uredineae. For this reason, when I discovered on *Rynchospora corniculata* (Lam.) A. Gray, a *Puccinia*, I immediately began to try to find some place for it among the species recorded on the various Cyperaceae. After careful comparisons this species of *Puccinia* was found to agree fairly well with *Puccinia angustata* Peck but differs from it sufficiently to warrant its description as a new species.

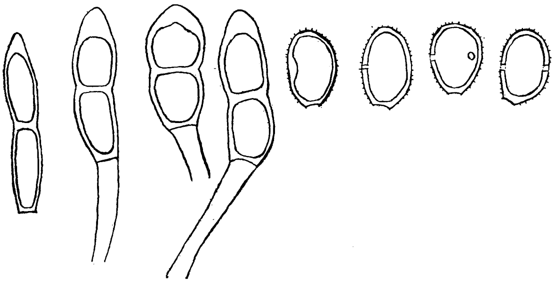

FIGURE 1. *P. angustata* Peck. II and III, × 260.

Notice the position and character of the germ-pores of the urediniospores.

Puccinia angustatoides sp. nov.

O et I. Incognatis.

II. Urediniosoris hypophyllis, minutis, linearibus, 0.5–1 mm.,

cinnamomeo-brunneis, pulverulentis, sparsis, epidermide diu tectis. Urediniosporis subglobosis v. obovoideis, echinulatis, ferrugineo-brunneis, 19–22 μ x 10–17 μ, poris germinationis 2 supra aequetorem praeditis.

III. Teliosoris hypophyllis, atro-brunneis, linearibus, 0.5–1.5 mm., sparsis, epidermide tectis. Teliosporis castaneo-brunneis, inaequalibus, clavatis, 40–70 μ x 15–26 μ, medio constrictis, apice valde incrassatis 5–10 μ, obtusis v. acuminatis; pedicello persistente, brunneo, 19–40 μ.

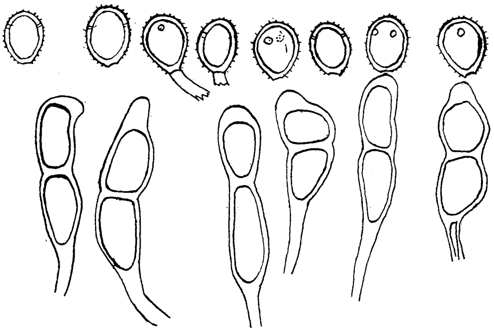

FIGURE 2. *P. angustatoides.* II and III, × 260.

The figures show more difference in the teliospores than usually exists. The urediniospores are very characteristic, as is also the position of the germ-pores.

O et I. Incognatis.

II et III. In vivis foliis *Rynchosporae corniculatae* (Lam.) A. Gray, Auburn, Alabama, Sept. 17, 1908, *R. E. Stone.*

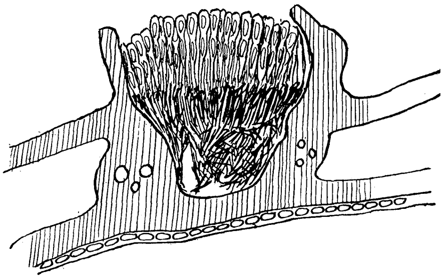

FIGURE 3. Section through a sorus of *P. angustata* Peck, as found on *Scirpus atrovirens*, × 80. The mass of hyphae in the lower part is very characteristic.

III. Auburn, Alabama, Jan. 1, 1909, *E. E. Binford.*

This rust has a close resemblance to *P. angustata* Peck on *Scirpus atrovirens.* The teliospores are of about the same size and shape and have the same position on the leaf. However the sori are more scattered, a little lighter in color and do not become confluent. The most prominent difference between the telia becomes apparent upon examining a section through a sorus. In all the specimens of *P. angustata* which I have been able to secure, there is a very prominent development of the hyphae in the large intercellular spaces of the leaf, especially immediately under a sorus. In fact the very large intercellular space between the vascular bundles is almost filled with hyphae. In *P. angustatoides* this development is much less pronounced, although the space between the vascular bundles is filled with stellate cells and would, apparently, offer a much better chance for the hyphae to develop. In studying the fungus this was the first thing to become apparent. Also, the telia are much more deeply sunken in *P. angustata* Peck.

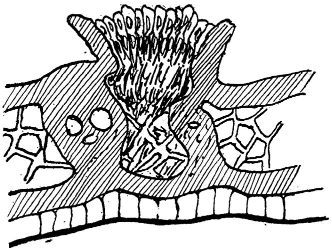

FIGURE 4. Section through a sorus of *P. angustatoides* on *Rynchospora corniculata*, × 80. This sorus is more superficial in every way than that of *P. angustata.*

The most distinctive difference between these two rusts is found in the uredinia and urediniospores. The uredinia in *P. angustatoides* are a little darker than in *P. angustata*, are more definite, scattered, rarely confluent. The urediniospores of *P. angustatoides* are several μ smaller than those of *P. angustata*, 19–22 μ × 10–17 μ as against 21–30 μ × 16–21 μ; they are subglobose to obovoid as against globose to elliptical in *P. angustata.* The last point of difference lies in the distribution of the germ-pores. In *P. angustata* the pores are 2, opposite and approximately equatorial; in *P. angustatoides* they are considerably above the equator, at least half way to the distal end of the spore, two in number and without a prominent thickening of the wall.

The accompanying figures show the most prominent differences.

Type specimens gathered by R. E. Stone, at Auburn, Alabama, Sept. 17, 1908, on *Rynchospora corniculata* (Lam.) A. Gray, deposited in the herbarium of the University of Nebraska.

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